

PROFESSIONAL TRAINING REPORT
at
Sathyabama Institute of Science and Technology
(Deemed to be University)

Submitted in partial fulfillment of the requirements for the
award of Bachelor of Technology (Information Technology)

By

kishore D

Register number : 39120055



DEPARTMENT OF INFORMATION TECHNOLOGY
SCHOOL OF COMPUTING

SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY

JEPPIAAR NAGAR, RAJIV GANDHI SALAI,

CHENNAI – 600119, TAMILNADU

DEPARTMENT OF INFORMATION TECHNOLOGY

BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **kishore D** who carried out the project entitled “**cloud computing**” under my supervision from August 2021 to November 2021

Internal Guide

Dr.R.Subhashini M.E., Ph.d.,

Head of the department

Dr.R.Subhashini M.E., Ph.d.,

Submitted for Viva voce Examination held on

Internal Examiner

External Examiner

DECLARATION

I hereby declare that the Project Report entitled "**CLOUD COMPUTING**" done by me under the guidance of **Dr.R.Subhashini M.E., Ph.d.**, at Sathyabama Institute of Science and Technology (Deemed to be University), Jeppiaar Nagar, Rajiv Gandhi Salai, Chennai - 600119 is submitted in partial fulfillment of the requirements for the award of Bachelor of Technology degree in Information Technology.

DATE:

Place: Chennai

SIGNATURE OF THE CANDIDATE

ACKNOWLEDGMENT

I am pleased to acknowledge our sincere thanks to Board of management of **SATHYABAMA** for their kind encouragement in doing this project and for completing it successfully. I am grateful to them.

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ABSTRACT

Cloud computing has become the embraced in the computer world. Cloud implementation is the process of creating a virtual computing environment. Adopting Amazon Web Services (AWS) presents many benefits, such as increased business agility and flexibility, as well as reduced costs.

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1.Introduction

Cloud Computing is the delivery of computing services such as servers, storage, databases, networking, software, analytics, intelligence, and more, over the Cloud (Internet).

Cloud Computing provides an alternative to the on-premises datacenter. With an on-premises datacenter, we have to manage everything, such as purchasing and installing hardware, virtualization, installing the operating system, and any other required applications, setting up the network, configuring the firewall, and setting up storage for data. After doing all the set-up, we become responsible for maintaining it through its entire lifecycle.

But if we choose Cloud Computing, a cloud vendor is responsible for the hardware purchase and maintenance. They also provide a wide variety of software and platform as a service. We can take any required services on rent. The cloud computing services will be charged based on usage.

With Amazon Web Services (AWS) your organization can immediately provision the compute, storage, network, and database resources needed for any project. These resources launch and are ready for use by your project team within minutes. The environment can be reconfigured easily, updated quickly, scaled up or down automatically to meet usage patterns and optimize spending, or shut down temporarily or permanently. The billing for AWS services becomes an operational expense rather than a capital expense.

Cloud computing has recently emerged as a new paradigm for hosting and delivering services over the Internet. Cloud computing is attractive to business owners as it eliminates the requirement for users to plan ahead for provisioning, and allows enterprises to start from the small and increase resources only when there is a rise in service demand.

However, despite the fact that cloud computing offers huge opportunities to the IT industry, the development of cloud computing technology is currently at its infancy, with many issues still to be addressed. The emergence of the phenomenon commonly known as cloud computing represents a fundamental change in the way information technology (IT) services are invented, developed, deployed, scaled, updated, maintained and paid for.

Computing as we know today reflects a paradox — on one hand, computers continue to become exponentially more powerful and the per-unit cost of computing continues to fall rapidly, so much so that computing power per se is nowadays considered to be largely a commodity.

On the other hand, as computing becomes more pervasive within the organization, the increasing complexity of managing the whole infrastructure of disparate information architectures and distributed data and software has made computing more expensive than ever before to an organization.

The promise of cloud computing is to deliver all the functionality of existing information technology services even as it dramatically reduces the upfront costs of

computing that deter many organizations from deploying many cutting-edge IT services [4]. All such promise has led to lofty expectations — Gartner Research expects cloud computing to be a \$150 billion business by 2014, and according to AMI partners, small and medium businesses are expected to spend over \$100 billion on cloud computing by 2014.

The impetus for change right now is seen predominantly from a cost perspective (even though, as we discuss later in the document, the promises from a technological functionality perspective are equally attractive), as organizations increasingly discover that their substantial capital investments in information technology are often grossly underutilized

2. AIM AND SCOPE

2.1 AIM

The aim of this project is analysis the challenges and benefits of adopting AWS(Amazon Web Service),in this project we can get to know the challenges and benefits of using AWS briefly, and creating a windows using EC2 instances in AWS.

2.2 SCOPE

Amazon Web Services, popularly known as AWS in the market, is a secure cloud service platform. It offers various functions for a business to scale up and grow such as computing power, content delivery, database storage and many other functionalities

The Cloud market is growing rapidly and has accepted AWS to a great extent in recent years. ... AWS package has been turned as a huge revenue earner for Amazon as it is being used by most of the companies worldwide for migrating applications overcloud.

3.CREATING WINDOWS USING E2C INSTANCES AWS:

To create ec2 instance (windows server) in aws

Step1- click ec2 from services tab

Step2- click launch instance

Step 3- In AMI select windows server 2019

Step4-choose instance type

Step5-configure instance details

Step6- add storage

Step7-add tags

Step8-configure security group

Step9 –launch

Step 10 – select key pair

Step 11- key pair is downloaded then launch instances

Step 12- view instances

Step 13- wait till status check of instances is passed

Step 14- now go to connect option from instances

Step 15 – Go to RDP client and download remote desktop file

Step 16- browse the key file decrypt password

RESULT OF CREATING WINDOWS:

REVIEW

Challenges associated in adopting in amazon web services:

The screenshot shows the AWS Management Console during the 'Step 7: Review Instance Launch' process. The breadcrumb navigation at the top indicates the steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group, and 7. Review (which is the current step).

Step 7: Review Instance Launch
Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

AMI Details [Edit AMI](#)

Microsoft Windows Server 2019 Base - ami-0300b3c1504b56ca4
Free tier eligible. Microsoft Windows 2019 Datacenter edition. [English]
Root Device Type: ebs Virtualization type: hvm
If you plan to use this AMI for an application that benefits from Microsoft License Mobility, fill out the [License Mobility Form](#). Don't show me this again

Instance Type [Edit instance type](#)

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	-	1	1	EBS only	-	Low to Moderate

Security Groups [Edit security groups](#)

Security group name launch-wizard-1
Description launch-wizard-1 created 2021-09-06T16:35:22.521+05:30

Type	Protocol	Port Range	Source	Description
RDP	TCP	3389	103.238.106.183/32	

Buttons at the bottom right: [Cancel](#), [Previous](#), [Launch](#). A tooltip for 'Launch' says 'Define key pair and launch'.

Footer: © 2008 - 2021, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved. Privacy Policy Terms of Use Cookie preferences

Challenge 1:

Skill set

Challenge 2:

Tech support

Challenge 3:

Control

Challenge 4:

Security and data protection

Challenge 5:

Performance and uptime

Amazon Web Services (AWS) is a secure public cloud service and everyone wants a part of it. Offering on-demand delivery of compute power, database storage, applications and other IT resources through its cloud services platform via the internet with pay-as-you-go pricing, it is a commercially viable option for start-ups, Fintechs and other companies not looking to make large upfront investments in hardware.

Comprising an estimated 1.3m servers and a global reach across 190 countries, it's also ideal for developers, as they can test scenarios on a sandboxed environment without impacting their production services

4.1 Challenge 1: Skill set

AWS is known for providing a highly configurable, feature-rich cloud offering but it does have a steep learning curve. So if your in-house IT resource is small and potentially new to AWS, it can be a challenge to get skilled up and started swiftly.

4.2 Challenge 2: Tech support

Amazon does offer different levels of tech support depending on how quickly you need issues resolved and if you need a dedicated account manager or tech support for integrations with third-party plugins if something goes wrong. However, AWS support fees vary on a sliding scale tied to monthly usage, so support costs can grow quickly if you are a very heavy user.

4.3 Challenge 3: Control

Storing sensitive and proprietary data on external environments carries risks. Despite successful use cases that Amazon provides, moving sensitive data and business pertinent environments to the public cloud can require authorisation and extensive levels of bureaucratic red tape.

4.4 Challenge 4: Security and data protection

Ensuring that data is secure when deploying a cloud environment can be a daunting task. Naturally, as the adoption of cloud resources continues to grow, the risk of data breaches grows with it too. Closely tied in with security, is data protection. Many governments place strict data protection requirements on companies and standards audit schemes such as ISO-9001 place additional restrictions on firms.

4.5 Challenge 5: Performance and uptime

Performance and uptime have a direct effect on the bottom line. A fraction of a second on load time can lead customers to leave a site, costing sales. And if your site is down for even a few minutes it can affect not just the direct bottom line, but have a longer-term impact on SEO and brand reputation as well

4.6 Disadvantage of AWS:

Companies that are using AWS will have default resources to use, but the problem comes when default resource limits vary from region to region. Although they can submit a request for more resources, companies find it a disadvantage of AWS

5. Benefits of adopting AWS:

5.1 Easy to use:

AWS is designed to allow application providers, ISVs, and vendors to quickly and securely host your applications – whether an existing application or a new SaaS-

based application. You can use the AWS Management Console or well-documented web services APIs to access AWS's application hosting platform.

5.2 Flexible:

AWS enables you to select the operating system, programming language, web application platform, database, and other services you need. With AWS, you receive a virtual environment that lets you load the software and services your application requires. This eases the migration process for existing applications while preserving options for building new solutions.

5.3 Cost-Effective:

You pay only for the compute power, storage, and other resources you use, with no long-term contracts or up-front commitments. For more information on comparing the costs of other hosting alternatives with AWS, see the AWS Economics Center.

5.4 Reliable:

With AWS, you take advantage of a scalable, reliable, and secure global computing infrastructure, the virtual backbone of Amazon.com's multi-billion dollar online business that has been honed for over a decade.

5.5 Scalable and high-performance:

Using AWS tools, Auto Scaling, and Elastic Load Balancing, your application can scale up or down based on demand. Backed by Amazon's massive infrastructure, you have access to compute and storage resources when you need them.

5.6 Secure:

AWS utilizes an end-to-end approach to secure and harden our infrastructure, including physical, operational, and software measures.



5.7 AWS Pricing

Whether you are a small scale startup or a full-fledged enterprise, Amazon Web Services has you covered when it comes to pricing. Firstly it offers 'pay as you go model', that means you pay for resources in volumes and duration you use them for. It charges you on a per-minute basis. Meaning if a resource is used for 30 minutes you be charged only for those 30 minutes and not more. It also offers a calculator that lets you track your expenses.

5.8 PaaS Offerings

AWS offers an infrastructure that is scalable and also covers core domains, like compute storage, databases, networking. In the process, it takes care of configuring and managing platforms. Hence it provides good options when it comes to providing PaaS services to people. Meaning people do not have to worry about setting up infrastructures.

Popular Customers of Amazon Web Services

1. McDonald's
2. Netflix
3. Unilever
4. Samsung

5. Airbnb
6. BMW
7. ESPN
8. MI

5. CONCLUSION:

If you are in the early stages of adopting AWS, you can use these best practices to start implementing an AWS environment structure that is sufficient to meet your initial needs. As your adoption of AWS expands and your requirements increase, you can be confident that your AWS environment can be expanded to meet those needs without requiring significant restructuring.

If you already have an AWS environment in place, you can use these best practices to assess its current state. By doing so, you can determine if you're fully realizing the benefits of using multiple OUs and AWS accounts and, if necessary, you can make plans to enhance your current environment with all of the hype around cloud computing, and multiple definitions of cloud computing, it is difficult to discern exactly what constitutes "cloud computing." This problem is made more difficult as vendors rush to claim that they are now cloud computing companies, or at least "cloud-friendly." Suddenly, the entire technology sector has become "cloudy"—similar to the dot-com stampede of the late 1990s.

Adopting one or another technology should start by evaluating the economical processes of the organization. IT is, or it is supposed to be, an integrated part of a business. We need technology to support or improve the economical processes. Before rushing into the cloud, the company should study their processes and evaluate the risks and advantages brought to their business. Since the small and mid-size companies have less complex processes, they should be the first category of businesses to use cloud computing services.

One of the most important advantages offered by cloud computing is the reduced cost. Related to the IT governance principles we should study first the value brought by cloud services to our organization. This value is defined by two characteristics: utility and guarantee. Any organization has customers and the main scope is satisfying their needs. In my opinion, the organization should first define their economic objectives related to the 4 elements of the balanced scorecard: financial, customer, internal and learning-development and then we should identify the way cloud services can sustain these objectives.

And we created the windows using EC2 instances in AWS successfully.